

505

## RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 101521,513  
Source: PCT  
Date Processed by STIC: 01/10/2006

***ENTERED***



PCT

**RAW SEQUENCE LISTING**  
**PATENT APPLICATION:** US/10/521,513

**DATE:** 01/10/2006  
**TIME:** 08:14:46

**Input Set :** N:\Crf3\RULE60\10521513.raw.txt  
**Output Set:** N:\CRF4\01102006\J521513.raw

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1 <110> APPLICANT: BIOGEN, INC.
2 <120> TITLE OF INVENTION: THERAPIES FOR RENAL FAILURE USING INTERFERON-BETA
3 <130> FILE REFERENCE: BII-001.25
4 <140> CURRENT APPLICATION NUMBER: US 10/521,513
5 <141> CURRENT FILING DATE: 2005-01-18
6 <150> PRIOR APPLICATION NUMBER: PCT/US03/22440
7 <151> PRIOR FILING DATE: 2003-07-17
8 <150> PRIOR APPLICATION NUMBER: US 60/396,393
9 <151> PRIOR FILING DATE: 2002-07-17
10 <160> NUMBER OF SEQ ID NOS: 21
11 <170> SOFTWARE: PatentIn Ver. 2.1
13 <210> SEQ ID NO: 1
14 <211> LENGTH: 840
15 <212> TYPE: DNA
16 <213> ORGANISM: Homo sapiens
17 <220> FEATURE:
18 <221> NAME/KEY: CDS
19 <222> LOCATION: (76)..(636)
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21 acatcttaac tgcaaccttt cgaaggcctt gctctggcac aacaggtagt aggcgacact 60
22 gttcggttg tcaac atg acc aac aag tgt ctc ctc caa att gct ctc ctg 111
23 Met Thr Asn Lys Cys Leu Leu Gln Ile Ala Leu Leu
24 1 5 10
25 ttg tgc ttc tcc act aca gct ctt tcc atg agc tac aac ttg ctt gga 159
26 Leu Cys Phe Ser Thr Ala Leu Ser Met Ser Tyr Asn Leu Leu Gly
27 15 20 25
28 ttc cta caa aga agc agc aat ttt cag tgt cag aag ctc ctg tgg caa 207
29 Phe Leu Gln Arg Ser Ser Asn Phe Gln Cys Gln Lys Leu Leu Trp Gln
30 30 35 40
31 ttg aat ggg agg ctt gaa tac tgc ctc aag gac agg atg aac ttt gac 255
32 Leu Asn Gly Arg Leu Glu Tyr Cys Leu Lys Asp Arg Met Asn Phe Asp
33 45 50 55 60
34 atc cct gag gag att aag cag ctg cag cag ttc cag aag gag gac gcc 303
35 Ile Pro Glu Glu Ile Lys Gln Leu Gln Gln Phe Gln Lys Glu Asp Ala
36 65 70 75
37 gca ttg acc atc tat gag atg ctc cag aac atc ttt gct att ttc aga 351
38 Ala Leu Thr Ile Tyr Glu Met Leu Gln Asn Ile Phe Ala Ile Phe Arg
39 80 85 90
40 caa gat tca tct agc act ggc tgg aat gag act att gtt gag aac ctc 399
41 Gln Asp Ser Ser Ser Thr Gly Trp Asn Glu Thr Ile Val Glu Asn Leu
42 95 100 105
43 ctg gct aat gtc tat cat cag ata aac cat ctg aag aca gtc ctg gaa 447
44 Leu Ala Asn Val Tyr His Gln Ile Asn His Leu Lys Thr Val Leu Glu

```

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45           110          115          120
46 gaa aaa ctg gag aaa gaa gat ttc acc agg gga aaa ctc atg agc agt   495
47 Glu Lys Leu Glu Lys Glu Asp Phe Thr Arg Gly Lys Leu Met Ser Ser
48           125          130          135          140
49 ctg cac ctg aaa aga tat tat ggg agg att ctg cat tac ctg aag gcc   543
50 Leu His Leu Lys Arg Tyr Tyr Gly Arg Ile Leu His Tyr Leu Lys Ala
51           145          150          155
52 aag gag tac agt cac tgt gcc tgg acc ata gtc aga gtg gaa atc cta   591
53 Lys Glu Tyr Ser His Cys Ala Trp Thr Ile Val Arg Val Glu Ile Leu
54           160          165          170
55 agg aac ttt tac ttc att aac aga ctt aca ggt tac ctc cga aac   636
56 Arg Asn Phe Tyr Phe Ile Asn Arg Leu Thr Gly Tyr Leu Arg Asn
57           175          180          185
58 tgaagatctc ctagcctgtg cctctggac tggacaattt cttaaggcat tcttcaaccca 696
59 gcagatgctg tttaagtgc acgtggctaa tgtaactgcat atgaaaggac actagaagat 756
60 tttgaaattt ttattaaatt atgagttatt ttattttttaaaattttat tttggaaaat 816
61 aaattttttt tggtgcaaaa gtca                                840
63 <210> SEQ ID NO: 2
64 <211> LENGTH: 187
65 <212> TYPE: PRT
66 <213> ORGANISM: Homo sapiens
67 <400> SEQUENCE: 2
68 Met Thr Asn Lys Cys Leu Leu Gln Ile Ala Leu Leu Leu Cys Phe Ser
69     1           5           10          15
70 Thr Thr Ala Leu Ser Met Ser Tyr Asn Leu Leu Gly Phe Leu Gln Arg
71     20          25          30
72 Ser Ser Asn Phe Gln Cys Gln Lys Leu Leu Trp Gln Leu Asn Gly Arg
73     35          40          45
74 Leu Glu Tyr Cys Leu Lys Asp Arg Met Asn Phe Asp Ile Pro Glu Glu
75     50          55          60
76 Ile Lys Gln Leu Gln Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile
77     65          70          75          80
78 Tyr Glu Met Leu Gln Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser
79     85          90          95
80 Ser Thr Gly Trp Asn Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val
81     100         105         110
82 Tyr His Gln Ile Asn His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu
83     115         120         125
84 Lys Glu Asp Phe Thr Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys
85     130         135         140
86 Arg Tyr Tyr Gly Arg Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser
87     145         150         155          160
88 His Cys Ala Trp Thr Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr
89     165         170          175
90 Phe Ile Asn Arg Leu Thr Gly Tyr Leu Arg Asn
91     180         185
93 <210> SEQ ID NO: 3
94 <211> LENGTH: 501
95 <212> TYPE: DNA

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PATENT APPLICATION: US/10/521,513

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Input Set : N:\Crf3\RULE60\10521513.raw.txt

Output Set: N:\CRF4\01102006\J521513.raw

96 <213> ORGANISM: Homo sapiens  
 97 <220> FEATURE:  
 98 <221> NAME/KEY: CDS  
 99 <222> LOCATION: (1)..(498)  
 100 <400> SEQUENCE: 3

101	atg	agc	tac	aac	ttg	ctt	gga	ttc	cta	caa	aga	agc	aat	ttt	cag		48
102	Met	Ser	Tyr	Asn	Leu	Leu	Gly	Phe	Leu	Gln	Arg	Ser	Ser	Asn	Phe	Gln	
103	1				5				10					15			
104	tgt	cag	aag	ctc	ctg	tgg	caa	ttg	aat	ggg	agg	ctt	gaa	tac	tgc	ctc	96
105	Cys	Gln	Lys	Leu	Leu	Trp	Gln	Leu	Asn	Gly	Arg	Leu	Glu	Tyr	Cys	Leu	
106					20				25				30				
107	aag	gac	agg	atg	aac	ttt	gac	atc	cct	gag	gag	att	aag	cag	ctg	cag	144
108	Lys	Asp	Arg	Met	Asn	Phe	Asp	Ile	Pro	Glu	Glu	Ile	Lys	Gln	Leu	Gln	
109					35				40			45					
110	cag	ttc	cag	aag	gag	gac	gcc	gca	ttg	acc	atc	tat	gag	atg	ctc	cag	192
111	Gln	Phe	Gln	Lys	Glu	Asp	Ala	Ala	Leu	Thr	Ile	Tyr	Glu	Met	Leu	Gln	
112					50				55			60					
113	aac	atc	ttt	gct	att	ttc	aga	caa	gat	tca	tct	agc	act	ggc	tgg	aat	240
114	Asn	Ile	Phe	Ala	Ile	Phe	Arg	Gln	Asp	Ser	Ser	Ser	Thr	Gly	Trp	Asn	
115					65				70			75		80			
116	gag	act	att	gtt	gag	aac	ctc	ctg	gct	aat	gtc	tat	cat	cag	ata	aac	288
117	Glu	Thr	Ile	Val	Glu	Asn	Leu	Leu	Ala	Asn	Val	Tyr	His	Gln	Ile	Asn	
118					85				90			95					
119	cat	ctg	aag	aca	gtc	ctg	gaa	gaa	aaa	ctg	gag	aaa	gaa	gat	ttc	acc	336
120	His	Leu	Lys	Thr	Val	Leu	Glu	Glu	Lys	Leu	Glu	Lys	Glu	Asp	Phe	Thr	
121					100				105			110					
122	agg	gga	aaa	ctc	atg	agc	agt	ctg	cac	ctg	aaa	aga	tat	tat	ggg	agg	384
123	Arg	Gly	Lys	Leu	Met	Ser	Ser	Leu	His	Leu	Lys	Arg	Tyr	Tyr	Gly	Arg	
124					115				120			125					
125	att	ctg	cat	tac	ctg	aag	gcc	aag	gag	tac	agt	cac	tgt	gcc	tgg	acc	432
126	Ile	Leu	His	Tyr	Leu	Lys	Ala	Lys	Glu	Tyr	Ser	His	Cys	Ala	Trp	Thr	
127					130				135			140					
128	ata	gtc	aga	gtg	gaa	atc	cta	agg	aac	ttt	tac	tcc	att	aac	aga	ctt	480
129	Ile	Val	Arg	Val	Glu	Ile	Leu	Arg	Asn	Phe	Tyr	Phe	Ile	Asn	Arg	Leu	
130					145				150			155		160			
131	aca	ggt	tac	ctc	cga	aac	tga										501
132	Thr	Gly	Tyr	Leu	Arg	Asn											
133					165												
135	<210>	SEQ ID NO:	4														
136	<211>	LENGTH:	166														
137	<212>	TYPE:	PRT														
138	<213>	ORGANISM:	Homo sapiens														
139	<400>	SEQUENCE:	4														
140	Met	Ser	Tyr	Asn	Leu	Leu	Gly	Phe	Leu	Gln	Arg	Ser	Ser	Asn	Phe	Gln	
141		1			5				10			15					
142	Cys	Gln	Lys	Leu	Leu	Trp	Gln	Leu	Asn	Gly	Arg	Leu	Glu	Tyr	Cys	Leu	
143					20				25			30					
144	Lys	Asp	Arg	Met	Asn	Phe	Asp	Ile	Pro	Glu	Glu	Ile	Lys	Gln	Leu	Gln	
145					35				40			45					

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PATENT APPLICATION: US/10/521,513

DATE: 01/10/2006

TIME: 08:14:46

Input Set : N:\Crf3\RULE60\10521513.raw.txt

Output Set: N:\CRF4\01102006\J521513.raw

146 Gln Phe Gln Lys Glu Asp Ala Ala Leu Thr Ile Tyr Glu Met Leu Gln  
 147 50 55 60  
 148 Asn Ile Phe Ala Ile Phe Arg Gln Asp Ser Ser Ser Thr Gly Trp Asn  
 149 65 70 75 80  
 150 Glu Thr Ile Val Glu Asn Leu Leu Ala Asn Val Tyr His Gln Ile Asn  
 151 85 90 95  
 152 His Leu Lys Thr Val Leu Glu Glu Lys Leu Glu Lys Glu Asp Phe Thr  
 153 100 105 110  
 154 Arg Gly Lys Leu Met Ser Ser Leu His Leu Lys Arg Tyr Tyr Gly Arg  
 155 115 120 125  
 156 Ile Leu His Tyr Leu Lys Ala Lys Glu Tyr Ser His Cys Ala Trp Thr  
 157 130 135 140  
 158 Ile Val Arg Val Glu Ile Leu Arg Asn Phe Tyr Phe Ile Asn Arg Leu  
 159 145 150 155 160  
 160 Thr Gly Tyr Leu Arg Asn  
 161 165  
 163 <210> SEQ ID NO: 5  
 164 <211> LENGTH: 15  
 165 <212> TYPE: DNA  
 166 <213> ORGANISM: Artificial Sequence  
 167 <220> FEATURE:  
 168 <223> OTHER INFORMATION: Description of Artificial Sequence: Linker  
 169 oligonucleotide  
 170 <400> SEQUENCE: 5  
 171 ggcggtggtg gcagc 15  
 173 <210> SEQ ID NO: 6  
 174 <211> LENGTH: 5  
 175 <212> TYPE: PRT  
 176 <213> ORGANISM: Artificial Sequence  
 177 <220> FEATURE:  
 178 <223> OTHER INFORMATION: Description of Artificial Sequence: Linker peptide  
 179 <400> SEQUENCE: 6  
 180 Gly Gly Gly Gly Ser  
 181 1 5  
 183 <210> SEQ ID NO: 7  
 184 <211> LENGTH: 15  
 185 <212> TYPE: DNA  
 186 <213> ORGANISM: Artificial Sequence  
 187 <220> FEATURE:  
 188 <223> OTHER INFORMATION: Description of Artificial Sequence: Enterokinase  
 189 recognition site oligonucleotide  
 190 <400> SEQUENCE: 7  
 191 gacgatgtg acaag 15  
 193 <210> SEQ ID NO: 8  
 194 <211> LENGTH: 5  
 195 <212> TYPE: PRT  
 196 <213> ORGANISM: Artificial Sequence  
 197 <220> FEATURE:  
 198 <223> OTHER INFORMATION: Description of Artificial Sequence: Enterokinase

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PATENT APPLICATION: US/10/521,513

DATE: 01/10/2006

TIME: 08:14:46

Input Set : N:\Crf3\RULE60\10521513.raw.txt  
 Output Set: N:\CRF4\01102006\J521513.raw

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199      recognition site
200 <400> SEQUENCE: 8
201      Asp Asp Asp Asp Lys
202          1           5
204 <210> SEQ ID NO: 9
205 <211> LENGTH: 24
206 <212> TYPE: DNA
207 <213> ORGANISM: Artificial Sequence
208 <220> FEATURE:
209 <223> OTHER INFORMATION: Description of Artificial Sequence: Modified enterokinase
210      recognition site oligonucleotide
211 <400> SEQUENCE: 9
212      agctccggag acgatgtatcaag                                24
214 <210> SEQ ID NO: 10
215 <211> LENGTH: 8
216 <212> TYPE: PRT
217 <213> ORGANISM: Artificial Sequence
218 <220> FEATURE:
219 <223> OTHER INFORMATION: Description of Artificial Sequence: Modified
220      enterokinase recognition site
221 <400> SEQUENCE: 10
222      Ser Ser Gly Asp Asp Asp Asp Lys
223          1           5
225 <210> SEQ ID NO: 11
226 <211> LENGTH: 1257
227 <212> TYPE: DNA
228 <213> ORGANISM: Artificial Sequence
229 <220> FEATURE:
230 <221> NAME/KEY: CDS
231 <222> LOCATION: (1)..(1254)
232 <220> FEATURE:
233 <223> OTHER INFORMATION: Description of Artificial Sequence: Synthetic
234      IFN-beta G162C-Ig direct fusion construct nucleotide
235      sequence
236 <400> SEQUENCE: 11
237      atg cct ggg aag atg gtc gtg atc ctt gga gcc tca aat ata ctt tgg    48
238      Met Pro Gly Lys Met Val Val Ile Leu Gly Ala Ser Asn Ile Leu Trp
239          1           5           10          15
240      ata atg ttt gca gct tct caa gcc atg agc tac aac ttg ctt gga ttc    96
241      Ile Met Phe Ala Ala Ser Gln Ala Met Ser Tyr Asn Leu Leu Gly Phe
242          20          25          30
243      cta caa aga agc agc aat ttt cag tgt cag aag ctc ctg tgg caa ttg    144
244      Leu Gln Arg Ser Ser Asn Phe Gln Cys Gln Lys Leu Leu Trp Gln Leu
245          35          40          45
246      aat ggg agg ctt gaa tac tgc ctc aag gac agg atg ttt gac atc    192
247      Asn Gly Arg Leu Glu Tyr Cys Leu Lys Asp Arg Met Asn Phe Asp Ile
248          50          55          60
249      cct gag gag att aag cag ctg cag cag ttc cag aag gag gac gcc gca    240
250      Pro Glu Glu Ile Lys Gln Leu Gln Gln Phe Gln Lys Glu Asp Ala Ala

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RAW SEQUENCE LISTING ERROR SUMMARY                    DATE: 01/10/2006  
PATENT APPLICATION: US/10/521,513                    TIME: 08:14:47

Input Set : N:\Crf3\RULE60\10521513.raw.txt  
Output Set: N:\CRF4\01102006\J521513.raw

Invalid Line Length:

The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:9; Line(s) 209

**VERIFICATION SUMMARY**

PATENT APPLICATION: US/10/521,513

DATE: 01/10/2006

TIME: 08:14:47

Input Set : N:\Crf3\RULE60\10521513.raw.txt  
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**STATISTICS SUMMARY** DATE: 01/10/2006  
PATENT APPLICATION: US/10/521,513 TIME: 08:14:47

Input Set : N:\Crf3\RULE60\10521513.raw.txt  
Output Set: N:\CRF4\01102006\J521513.raw

Application Serial Number: US/10/521,513

Alpha or Numeric or Xml: Numeric

Application Class:

Application File Date: 01-18-2005

Art Unit: PCT

Software Application: PatentIN2.1

Total Number of Sequences: 21

Total Nucleotides: 4020

Total Amino Acids: 1252

Number of Errors: 0

Number of Warnings: 0

Number of Corrections: 0

#### MESSAGE SUMMARY